

Part 8: Supporting Documentation

Canada thistle (*Cirsium arvense*) is considered a noxious weed in 35 states, including Alaska (11 AAC 34.020). The Department of Natural Resources maintains the statutory authority to control and eradicate the spread of Canada thistle as a pest (AS 44.37.030). Canada thistle is widespread in Anchorage, but has a limited distribution across the whole of Southcentral Alaska. The vast majority of the infestations within Anchorage are small, but are capable of becoming a source for the spread of new populations to the areas surrounding the Anchorage area potentially reaching natural and agricultural areas negatively impacting natural resources, wildlife, and recreation opportunities. Given Canada thistle's relatively limited distribution throughout the region and the state, these roadside infestations are a priority for management to prevent the infestations from spreading to neighboring communities.

Canada thistle is a difficult plant to manage due to persistent seedbank and an extensive root system that is capable of sending out new shoots each year. An individual plant may produce over 40,000 seeds a year (AKEPIC 2005).

Our management plan includes multiple mowing treatments followed by a single, systemic herbicide application (as recommended by the Cooperative Extension Service). Combined, these treatment techniques are aimed at preventing plants from producing mature, viable seed while also targeting the roots and perennial nature of the plant. Manual control and mowing alone are often not effective as they do not address the ability of Canada thistle to reproduce via rhizomes. Following the early season mowing treatments, a fall application of a systemic herbicide has been recommended by the Cooperative Extension Service to control the Canada thistle. This fall application targets a specific window of time when most indigenous vegetation is senescing and not as susceptible to herbicide treatment, therefore lowering the overall impact to other vegetation in the area. Canada thistle is still actively photosynthesizing at this time, and subsequent frosts will trigger the translocation of carbohydrates (and subsequently the herbicide) from the leaves to the roots allowing the herbicide to more effectively kill the Canada thistle. This combined mechanical and chemical treatment plan allows for a single application of herbicide therefore limiting the amount of herbicide exposure to the treatment site. The efficacy of this treatment regime will be closely monitored during the days and weeks following the application and overall plant reduction will be monitored in subsequent seasons with adjustments to the plan as necessary.

Treatment with herbicides will be the most effective way to control the priority populations of Canada thistle and prevent the further spread of Canada thistle along our roadways.

See attached recommendation by the Cooperative Extension Service for more information on the herbicides selected for use.

All of our treatment sites are more than 200 feet from any listed surface water (lake, stream and wetland) or subsurface water rights locations. At site 6 (Seward Highway just north of Huffman Road) Furrow Creek has been channeled below ground in a storm drain pipe approximately 148 feet from the treatment area and on the opposite side a major road (Huffman). The distance and physical separation (road and encasement in a storm pipe) should limit the potential impact to Furrow Creek.

The south portion of Site 3 is directly adjacent to a drainage ditch that may or may not have standing water in it at the time of application. To mitigate the risk of contamination, an herbicide and surfactant registered for aquatic use will be used on this site in a ten foot band extending from the water's edge in each direction. It will be applied as a spot treatment to allow the applicator to have more control and precision over where the herbicide is applied. The herbicide selected for application adjacent to the drainage ditch is registered for use in aquatic and other non-crop sites.

Due to the treatment sites' locations along the state highway right-of-way (ROW), precautions will be taken to ensure the safety of both the applicator and any highway traffic. The applicators will wear high-visibility safety vests as their outer layer and will place appropriate signage to notify traffic of work being performed on the ROW.

The applicators will have appropriate personal protective equipment (PPE) including, at a minimum, long-sleeved shirts, pants, and gloves to prevent exposure to the herbicide. The label will be consulted to ensure additional PPE is not required.

The herbicides to be used on these sites have been selected based on their applicability to each individual treatment area. All selected herbicides are registered for the treatment of Canada thistle in non-agricultural areas, and specifically, Right-of-Ways. See Recommendation Information from Cooperative Extension Service for more information on herbicide selection.

- **Transline** is a selective (targeting broadleaf weeds) herbicide that will target the broadleaf, perennial Canada thistle while allowing the native grasses to persist on the site. This will facilitate the re-establishment of the native plant population which will help mitigate the reintroduction of invasive weeds, and therefore allow less herbicide to be used over the lifespan of the management plan.

Transline to be used on:

- Site 1
 - Site 2
 - Site 3: South treatment sites-areas not directly adjacent to the roadside ditch or landscaping
 - Site 3: North treatment site-area not directly adjacent to landscaping
 - Site 6: Areas not adjacent to landscaping
- **Escalade 2** is a selective broadleaf weed control option for ornamental lawns, turf grasses and non-turf areas (including roadsides). It, too, will allow native grasses to persist on the site which will help mitigate

the re-introduction of invasive weeds, and therefore allow less herbicide to be used over the lifespan of the management plan.

Escalade 2 to be used on:

- Site 3: South treatment sites-areas adjacent to landscaping
- Site 3: North treatment site-areas adjacent to landscaping
- Site 6: Areas adjacent to landscaping

- **Aquamaster** is a postemergence, systemic herbicide with no residual soil activity. It gives broad-spectrum control of perennial weeds, such as Canada thistle. It is registered for use in aquatic and other non-crop sites. This herbicide was selected for use in areas adjacent to roadside ditches or sites with shallow water tables to mitigate concern of water contamination.

Aquamaster to be used on:

- Site 3: South treatment site-areas adjacent to roadside ditch
- Site 4
- Site 5

Signage will be conspicuously posted at multiple points around each treatment area for at least 24 hours after the application warning the public of recent herbicide activity. Due to the nature of the ROW, heavy human or animal traffic directly through the treatment areas is not expected.